



## **Appendix D-1 Operating Plan**

# SENSITIVITY ANALYSIS

	Alignment #1		LRT	LRT	LRT	LRT	LRT
	Coors to Coronado	Coors to Coronado	Reduce car capacity to 158 persons	Reduce car capacity to 158 persons, peak hour headways to 10 minutes	Reduce car capacity to 158 persons, single car trains at 7 minute peak	Reduce car capacity to 158 persons, single car trains at 10 minutes peak	Reduce car capacity to 158 persons, operate single car trains at 10 minutes peak, 20 minutes off peak
STATS	21.00 MPH	21.00 MPH	21.00 MPH	21.00 MPH	21.00 MPH	21.00 MPH	21.00 MPH
MODE	LRT	BRT	LRT	LRT	LRT	LRT	LRT
Feet	58,271	58,271	58,271	58,271	58,271	58,271	58,271
Route length	11.04	11.04	11.04	11.04	11.04	11.04	11.04
One way minutes	31.53	31.53	31.53	31.53	31.53	31.53	31.53
Round trip minutes	63.06	63.06	63.06	63.06	63.06	63.06	63.06
Miles per minute	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Average speed	21.00	21.00	21.00	21.00	21.00	21.00	21.00
10% contract layover	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Minimum cycle time	69.37	69.37	69.37	69.37	69.37	69.37	69.37
Peak Headway	7.50	7.50	7.50	10.00	7.50	10.00	10.00
Off-Peak Headway	10.00	10.00	10.00	10.00	10.00	10.00	20.00
Vehicles needed	9.25	9.25	9.25	6.94	9.25	6.94	6.94
Rounded	10.00	10.00	10.00	7.00	10.00	7.00	7.00
Available cycle time	75.00	75.00	75.00	70.00	75.00	70.00	70.00
Recovery available	5.63	5.63	5.63	0.63	5.63	0.63	0.63
Recovery percentage	8%	8%	8%	1%	8%	1%	1%
Peak Base Capacity (1-way)	3,072	720	2,528	1,896	1,264	948	948
Off-Peak Base Capacity (1-way)	2,304	540	1,896	1,896	948	948	474
Vehicles operated (min)	10	10	10	7	10	7	7
Vehicles operated (Recovery greater than 5%)	10	10	10	8	10	8	8
Peak Base Capacity (2-way)	6,144	1,440	5,056	3,792	2,528	1,896	1,896
Off-Peak Base Capacity (2-way)	4,608	1,080	3,792	3,792	1,896	1,896	948
Off-Peak Base Capacity (1 car train)	1,152	270	948	948	474	474	237
Total peak hour carrying capacity (two way)	36,664	8,640	30,336	22,752	15,168	11,376	11,376
Total off-peak carrying capacity (two way)	55,296	12,960	45,504	45,504	22,752	22,752	11,376
Total capacity	92,160	21,600	75,840	68,256	37,920	34,128	22,752
Rail cars/Buses per Departures	2	1	2	2	1	1	1
Capacity	192	90	158	158	158	158	158
Peak Departures per Hour	8	8	8	6	8	6	6
Off-Peak Departures per Hour	6	6	6	6	6	6	3
Hours of peak period service	6	6	6	6	6	6	6
Hours of off-peak period service	12	12	12	12	12	12	12
Total peak period departures	48	48	48	36	48	36	36
Total off-peak period departures	72	72	72	72	72	72	36
Total one way departures per day (1 way or 1 side)	120	120	120	108	120	108	72
Total round trip departures per day (both sides)	240	240	240	216	240	216	144
Revenue service train miles per day	2,649	2,649	2,649	2,384	2,649	2,384	1,589
Revenue service train miles per year	966,769	966,769	966,769	870,092	966,769	870,092	580,061
Cost per train mile	\$11.81	\$5.55	\$11.81	\$11.81	\$11.81	\$11.81	\$11.81
Annual Operating Cost	\$11,417,540	\$5,365,567	\$11,417,540	\$10,275,786	\$11,417,540	\$10,275,786	\$6,850,524
Cost per day	\$31,280.93	\$14,700.18	\$31,280.93	\$28,152.84	\$31,280.93	\$28,152.84	\$18,768.56
Cost per seat provided	\$0.34	\$0.68	\$0.41	\$0.41	\$0.82	\$0.82	\$0.82
Cost Savings			\$0	\$1,141,754			\$4,567,016
Peak hour capacity (two-way)				2,352			

## RTP OPERATIONS CHARACTERISTICS

Miles	10.67	10.67	10.34	10.34	12.81	12.81	10.52	10.52	10.05	10.05
	Central Ave & Louisiana	Central Ave & Louisiana	Lomas & Louisiana	Lomas & Louisiana	Central Avenue	Central Avenue	Central & San Mateo	Central & San Mateo	Central & Indian School	Central & Indian School
STATS	25.00 MPH	22.00 MPH	25.00 MPH	22.00 MPH	25.00 MPH	22.00 MPH	25.00 MPH	22.00 MPH	25.00 MPH	25.00 MPH
MODE	LRT	BRT	LRT	BRT	LRT	BRT	LRT	BRT	LRT	BRT
Feet	56,338	56,338	54,595	54,595	67,637	67,637	55,546	55,546	53,064	53,064
Route length	10.67	10.67	10.34	10.34	12.81	12.81	10.52	10.52	10.05	10.05
One way minutes	25.61	29.10	24.82	28.20	30.74	34.94	25.25	28.69	24.12	24.12
Round trip minutes	51.22	58.20	49.63	56.40	61.49	69.87	50.50	57.38	48.24	48.24
Miles per minute	0.42	0.37	0.42	0.37	0.42	0.37	0.42	0.37	0.42	0.42
Average speed	25.00	22.00	25.00	22.00	25.00	22.00	25.00	22.00	25.00	25.00
10% contract layover	5.12	5.82	4.96	5.64	6.15	6.99	5.05	5.74	4.82	4.82
Minimum cycle time	56.34	64.02	54.60	62.04	67.64	76.86	55.55	63.12	53.06	53.06
Peak Headway	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00
Off-Peak Headway	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	5.00	5.00
Evening Headway	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	10.00	10.00
Vehicles needed	9.39	10.67	9.10	10.34	11.27	12.81	9.26	10.52	10.61	10.61
Rounded	10.00	11.00	10.00	11.00	12.00	13.00	10.00	11.00	11.00	11.00
Available cycle time	60.00	66.00	60.00	66.00	72.00	78.00	60.00	66.00	55.00	55.00
Recovery available	3.66	1.98	5.40	3.96	4.36	1.14	4.45	2.88	1.94	1.94
Recovery percentage	6%	3%	9%	6%	6%	1%	7%	4%	4%	4%
Peak Base Capacity (1-way)	1,520	720	1,520	720	1,520	720	1,520	720	1,824	864
Off-Peak Base Capacity (1-way)	760	360	760	360	760	360	760	360	1,824	864
Evening Capacity (1-way)	608	288	608	288	608	288	608	288	912	432
Vehicles operated (min)	10	11	10	11	12	13	10	11	11	11
Vehicles operated (Recovery greater than 5%)	10	12	10	11	12	14	10	12	12	12
Peak Base Capacity (2-way)	3,040	1,440	3,040	1,440	3,040	1,440	3,040	1,440	3,648	1,728
Off-Peak Base Capacity (2-way)	1,520	720	1,520	720	1,520	720	1,520	720	3,648	1,728
Evening Capacity (2-way)	1,216	576	1,216	576	1,216	576	1,216	576	1,824	864
Total peak hour carrying capacity (two way)	18,240	8,640	18,240	8,640	18,240	8,640	18,240	8,640	43,776	20,736
Total off-peak carrying capacity (two way)	9,120	4,320	9,120	4,320	9,120	4,320	9,120	4,320	0	0
Total capacity	27,360	12,960	27,360	12,960	27,360	12,960	27,360	12,960	43,776	20,736
Rail cars/Bus per Departures	1	1	1	1	1	1	1	1	1	1
Capacity	152	72	152	72	152	72	152	72	152	72
Peak Departures per Hour	10	10	10	10	10	10	10	10	12	12
Off-Peak Departures per Hour	5	5	5	5	5	5	5	5	12	12
Evening Departures per Hour	4	4	4	4	4	4	4	4	6	6
Hours of peak period service	6	6	6	6	6	6	6	6	12	12
Hours of off-peak period service	6	6	6	6	6	6	6	6	0	0
Hours of Evening Service	6	6	6	6	6	6	6	6	6	6
Total peak period departures	60	60	60	60	60	60	60	60	144	144
Total off-peak period departures	30	30	30	30	30	30	30	30	0	0
Total Evening Departures	24	24	24	24	24	24	24	24	36	36
Total one way departures per day (1 way or 1 side)	114	114	114	114	114	114	114	114	180	180
Total round trip departures per day (both sides)	228	228	228	228	228	228	228	228	360	360
Revenue service miles per day	2,433	2,433	2,358	2,358	2,921	2,921	2,399	2,399	3,618	3,618
Revenue service miles per year	707,203	707,203	685,331	685,331	849,042	849,042	697,261	697,261	1,320,570	1,320,570
Cost per train mile	\$11.81	\$4.66	\$11.81	\$4.66	\$11.81	\$4.66	\$11.81	\$4.66	\$11.81	\$4.66
Annual Operating Cost	\$8,352,071	\$3,295,568	\$8,093,760	\$3,193,643	\$10,027,182	\$3,956,534	\$8,234,657	\$3,249,238	\$15,595,932	\$6,153,856
Cost per day	\$28,730.90	\$11,336.66	\$27,842.31	\$10,986.04	\$34,493.23	\$13,610.37	\$28,328.99	\$11,177.29	\$42,728.58	\$16,859.88
Cost per seat provided	\$1.05	\$0.87	\$1.02	\$0.85	\$1.26	\$1.05	\$1.04	\$0.86	\$0.98	\$0.81
Vehicles Needed (includes 20% spares)	12	15	12	14	15	17	12	15	15	15

## TRAVEL DISTANCES

Alignment Feet

1	56326
2	51463
3	67613

## TRAVEL TIMES

	Existing	Future	Low-range Improv	Mod-range Improv	High-range Improv	Hour Factors
MPH	14.00	11.00	14.00	18.00	22.00	26.00
Travel Time in Minutes	61.00	76.36	61.00	47.44	38.82	32.85
Ratio	100%	127%	100%	78%	64%	54%
Improvement		-27%	0%	22%	36%	46%
Central & Tramway to Downtown	43.00	54.73	43.00	33.44	27.36	23.15
Bridge & Central to Downtown	18.00	22.91	18.00	14.00	11.45	9.69
Downtown to UNM	12.00	15.27	12.00	9.33	7.64	6.46
Uptown to Downtown	50.00	63.64	50.00	38.89	31.82	26.92
<b>Calculated in Minutes</b>						
Future		Tramway to Downtown	Uptown to Downtown	Bridge to Downtown	Downtown to UNM	
		55.00	64.00	23.00	16.00	
			0.00	15.00	64.00	
		33.00	39	14	9	
		27.00	32	11	8	
		23	27	9	6	